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Music in the Iboga initiation ceremony in Gabon: Polyrhythms supporting a pharmacotherapy

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Abstract

Music is used by traditional cultures worldwide to create and accompany trance states. However, the influence of sophisticated compositions and the choice of instruments on patients' recovery has been hardly examined. Rouget (1990), in his comprehensive overview, assumes that the choice of instruments and music is insignificant. We had the opportunity to assist several Iboga initiation ceremonies in 1999, 2001 and 2003 in Gabon (Central Africa). We recorded the music and finally decided to become initiated ourselves. The Iboga healing ceremony induces a near-death experience and is performed to cure serious mental or psychosomatic diseases, but people also undergo initiation rites for reasons of spiritual or personal development.

After an analysis of the compositions and their function in the ceremonies we come to the conclusion that neither the musical structures nor the choice of instruments should be seen as cultural and incidental qualities: There are indications of direct somatic influences apart from the psychological ones. Not only the absolutely constant basic metre and the incessant use of polyrhythms, but also the harmonic organization and the choice of instruments in all probability serve to activate the cerebellum and generate theta-frequencies in the EEG. These methods seem to be used consciously to induce particular reactions, e.g. possession trances and visions. We suppose that the music increases the effect of the drug Ibogaine which is used during the initiation ritual so that patients may need smaller amounts only of this potentially harmful drug.

Introduction

In many traditional cultures, young adults experience an encounter with death during their initiation ceremony. For this purpose the pygmies use the root of the Iboga shrub. Initiation with this drug was imitated by several other ethnic groups who thought this drug to be more effective than their traditional initiation drugs. In the middle of the 20th century Iboga was discovered in Gabon as a remedy for serious mental or psychosomatic disorders. Consequently the average age of persons being initiated has risen; instead of the traditional initiation rituals on reaching puberty, initiations in the urban sector often serve to solve serious problems or fulfill a desire for self-awareness. Admission to the community of adults of the pygmy village is replaced by admission to the community of initiated people who also meet in future, organize ceremonies and who offer social protection (Goutarel 2000, Gollhofer and Sillans 1997, Mary 1983).

During a stay in Gabon in 1999 we met traditional healers of the ethnic group of Mitsogo in the region of Lambarené and studied their work.

FIGURE 1. Typical Mitsogho village



Having observed several initiation and curing ceremonies, and having recorded and analysed the music played during the ceremony, we decided to get initiated ourselves by the Mitsogho in Mitoné in December 2001 (U.M.) and in April 2003 (S.S.). We will concentrate on the Missoko initiation for men. Women's Mabandji initiation, which includes possession trance, is the topic of a separate paper. We start with the report of Uwe Maas' experience with the Missoko initiation. We will report pharmacological results about the drug Ibogaine used in the ceremony, and then analyze the musical compositions and the ritual use of instruments. At the end, we will propose some hypotheses about the neurophysiological effects of the music and interferences between music and drugs.

1. Personal experience: An initiation report by Uwe Maas

Six experienced male healers and musicians who accompanied the ceremony for the two nights, two female healers and the community of the village took part in my initiation among the Mitsogho people in the village of Mitone near Lambarené in December 2001.

I was fitted out with ritual weapons and protective objects for the encounters in the spiritual world. Just before sunset, having consumed about 150-200 g of the Iboga root's bark piece by piece, I reacted with nausea, coordination problems and tremor on the left side. I had a typical out-of-body experience in which I experienced myself as a football-sized spiritual being moving through visionary spaces.

FIGURE 2. Iboga visions



Simultaneously I perceived external reality so that I was able to communicate about and inform the others about my experiences. I moved around floating over tropical steppe and river landscapes, through long white corridors, with a countless number of doors, as well as under water without any (physical) resistance. I met several groups of people who seemed to have lived in older times and I met myself (as an independent individual).

My initiated attendants asked me to become active in this world: to move around, to open doors and to get in contact with the people I met. At first I had some problems with the (mental) movement and it was difficult to communicate. It took me about half an hour to learn this. Strangely enough, the mental communication then worked also in the "worldly" reality: I was able to make out every detail of my companions' faces although it was almost completely dark and I was sure that I could read their thoughts - especially these of the musicians.

At the end of the visions, while the dimensions of space and time changed in a peculiar way, I had a vision (similar to a parable) which impressed me as divine.

The initiated persons around me - approximately 15, many of whom had travelled to Mitoné just for the initiation of a German - didn't have any problems to control me on my journey and to classify my experiences. My friend, and father-of-initiation, Antoine Makondo in particular, who had been looking forward with excitement to my reactions, was apparently pleased that I saw the pictures he expected. The Mitsogho obviously had their (secret) criteria which enabled them to classify the visions of a foreigner. For example, I was sometimes prevented from speaking in order not to pass on secrets which were only meant for me. The interpretation seems to be independent of the initiate's personal knowledge because the aim of the initiation is not to investigate the initiate's past but a general experience: The journey into the hereafter, the encounters with dead people and with God, the experience of dying and rebirth. The Mitsogho realized that their European friend could make this experience, too.

After about six hours the intensity of the visions wore off and I became very tired. I leant against my mother-of-initiation who sat behind me and I began to return back to life. This period was accompanied by singing and elements of physical therapy. To loosen up my "rigor mortis", all my joints were moved - which, to my surprise, cracked audibly! - and I was asked to get up and make some easy movements, with the prompt result of dizziness, vomiting and new visions. After a rest I was supposed to dance for the first time in the morning and to take a ritual bath in the river. Afterwards I became partly isolated to mark the beginning of a new phase of my life. I was only allowed to talk to initiated persons, and in a ritual way. The ceremony came to an end with a dance celebration where I was admitted into the community of the initiated and simultaneously released into my real life (Figures 3+4).

FIGURE 3. On the way to the ritual bath



FIGURE 4. Entering the community of initiated men



2. The Iboga ceremony as a controlled near-death experience

Our visions during the Iboga initiation correspond with the experiences of other Europeans (Samorini 2000), with ethnological descriptions (Fernandez 1982) of out-of-body-experiences among the Gabonian Bwiti, and with reports by people who were very close to death. Greyson (1984) isolated four aspects of a near-death experience: a cognitive factor (acceleration of time, review of one's life, global understanding), an affective factor (feelings of joy, harmony and peace, a vision of an eternal light), a factor of paranormal experiences (transcendental perceptions, a view of the future, out-of-body-experiences) and a factor of transcendental experience (entering another world, encounter with mystical beings, deceased persons or gods). The psychological consequences of near-death experiences have been examined by various authors (Groth-Marnat and Summers 1998, Insinger 1991, Flynn 1984). Flynn (1984) interviewed 21 persons who remembered a near-death experience. Nearly all of them were less afraid of death and more likely to believe in life after death. Most of them also believed in a deeper meaning of life and had the impression of feeling the presence of God. Interest in material things had dropped whereas tolerance, empathy, sensitivity, understanding and acceptance of others people had increased. In addition, most of those interviewed were less dependent on the opinions of others.

Groth-Marnat and Summers (1998, S.118) explored changes of personality after near-death experiences. They summarize their results by saying "There is a general agreement that changes include greater concern for others (patience, tolerance, understanding), a reduction of death anxiety with a strengthened belief in an afterlife, greater transcendental feelings, a reduction in materialism, increased self-worth, greater appreciation for nature, and

increased awareness of paranormal phenomenon."

FIGURE 5. On the Ogoué river near Lambarené



These after-effects of spontaneous near-death experiences correspond with the expectations that Gabonian healers have of the initiation. According to the traditional healer Antoine Makondo, the initiation should not be considered as a direct form of healing but as a method to broaden one's self-concept. It would allow you to see the world with different eyes and to see and resolve problems in a new and better way. It should be a step towards a new spiritual vision of the world. In conversations with initiated males about the results of the experience we were told that they had become more adult, had given up bad habits like chatting up women, lazing around etc. They had started a serious life, got married, searched a job etc.. Women opt for initiation if they have difficulties becoming pregnant.

In addition to the general near-death experience, the initiation allows a controlled, and longer, journey into the hereafter, facilitates the processing of infancy experiences and also brings contact with dead relatives.

3. Pharmacological effects of Ibogaine

FIGURE 6. Iboga shrub



There are a lot of studies about Ibogaine, the extract from the Iboga root, because American scientists have explored its possible use in drug therapy (heroin, cocaine, alcohol). Preclinical studies show that a single dose of Ibogaine may have spectacular results: Without any withdrawal some addicts "forget" their addiction. Others have profound experiences after consumption of Ibogaine (e.g.: see themselves in a grave during the vision) so that they decide to give up drugs. The effect usually lasts for a few weeks or even months but unfortunately a lot of people take drugs again after this time. Pharmacological studies with mammals came to the same result: Animals which were given drugs regularly were less interested in them after consumption of Ibogaine. The fact that Ibogaine has been classified as illegal in the US (and in most European countries) is the reason why clinical examinations have not been possible so far. Ibogaine is an illegal drug in most countries, and there are doubts about clinical studies, as it is known that several people died after the consumption of Ibogaine for reasons unknown.

A large number of animal experiments (in vivo and in vitro) with effects of Ibogaine on the different neurotransmitter-systems (dopamine, serotonin) produced a lot of interesting, but partly contradictory, results which were probably caused by complex interactions between the different neurotransmitter-systems that have not been examined yet (Alper 2001, Goutarel 2000). The fact that Ibogaine creates near-death experiences has been almost completely ignored in pharmacological literature. But there are similarities between near-death experiences and impacts of Ibogaine on the pharmacological level. Ibogaine affects the cerebellum in the same way as ischemia. An overdose of Ibogaine kills certain groups of Purkinje cells, the same groups that die under ischemia (Welsh et. al. 2002). Purkinje cells are much more susceptible to cell death than other neurons. They might have the function of a fuse. With Purkinje cells being destroyed, the brain would adopt measures to protect the rest of the cells. Some authors believe that the near-death experiences belong to these measures (Whinnery 1997). Like ketamine, which also produces near-death experiences, Ibogaine has neuroprotective effects; this means it protects neurons (but not Purkinje cells) from cell death (Alper 2001).

It is not very probable, that the amounts of Ibogaine which humans consume actually kill Purkinje cells, because none of the well-known consequences of serious ischemia have ever been observed after consumption of Ibogaine. But we suspect a negative effect on the cerebellum for a short time, compensated later on by increased activation. Even increased cell growth might be assumed after the life-threatening situation, as demonstrated for cells in the hippocampus after global ischemia (Takasawa 2002).

The functions of the cerebellum remained a mystery to scientists for a long time. It has more cells than the rest of the brain. For a long time they were supposed to do nothing but support motor learning. The participation of the cerebellum in cognitive and creative tasks of the brain was investigated only recently (Leiner et. al. 1993). Ivry (1997) supposes that the cerebellum contains one (or several) "internal clocks" of the brain. Studies proved that people with damages of the cerebellum showed poor results in estimating short-time intervals compared to people

with damaged neocortex.

Recent studies also found correlations between mental illness and growth of the cerebellum. Persons suffering from schizophrenia, trauma or addiction were shown to have a smaller cerebellum than controls (Anderson et. al. 2002, Jurjus et. al. 1994).

4. Music therapeutic aspects of the ritual

To the Mitsogho, continuous musical support from musicians playing the mouth bow and the harp, accompanying percussions and singing is essential for the initiation process. Music is the "life-line" that reaches from this life to the hereafter and serves as a means of locomotion in visionary space. And that is exactly our own experience, the renewed onset of musical accompaniment, after short interruptions, reactivates the faltering visions, facilitates spiritual communication and improves mental and physical well-being considerably.

Apart from our own Missoko and Mabandji initiation respectively, we were able to observe two Mabandji initiation ceremonies and three healing rituals including possessional trance states among the Mitsogho tribe, and three Mabundi initiation rituals among the Fang tribe. We recorded about forty hours of ritual music all together, to be analysed in detail as follows.

4.1 Musical structures; Bimetric structure with continuously changing accents

FIGURE 7. Visualization of a 4:3-polyrhythm on the back of a harp. From author's collection



The music has the specific structure of a twelve-beat metre with an ambivalent division in 6 x 2 and 4 x 3 impulses:

TABLE 1. Polymetric placing of accents on 12 elementary beats at the time of X

6x2-metre = „waltz time"	X		X		X		X		X		X		X	
4x3-metre = „marching time"	X			X			X				X			

Between these (not always percussively marked) metrics, we have the periodically repeated melodic motive; its melorhythmics cannot be clearly associated with one of the two, and through continuous minimal variations it emphasizes one and then the other. In the trance-inducing phase, there is a striking increase in the number of rhythmic changes resulting from overlapping of different, very fast rhythmic elements. Rattles and ankle bells which systematically ring out between or beside the fundamental beat make the ritual music even more complex.

In the following example a dominant solistic clapping in a 3x4-metre is introduced, overlapping the 4x3-metre of the rattles and thus giving a new rhythmic interpretation to the melodic motif ([sound 1 : mp3 - 852 kb](#)).

TABLE 2. Polyrhythmic harp music with polymetric clapping

D'				x						x		x								
H			x					x		x				X				x		x
A						x														
G	x								x							x			x	
F						x					x									
E	x								x							x			x	
D											x									
CC	C						C					C					C			
SC	C					C					C				C				C	
RA	R				R				R				R			R			R	

Line 1-7 = relative pitch of the harp strings at the time of X

CC = joint clapping at the time of X

SC (blue) = dominant solistic clapping at the time of X

RA (yellow) = forward movement of rattles at the time of X

From left to right: elementary beats (smallest metrical units)

Ritual meaning:

"There are always various paths and multiple crossroads." (Magui Abaniz Lubin, traditional healer at Medang-Nkoghe near Lambarené)

- Perfect alternating balance for basis chords, melodic moves and rhythmic patterns

The following piece for harp illustrates these principles; based on 16 elementary beats (which is unusual), with alternating binary and ternary melorhythm, its typical 3:2 interlocking of treble and baseline, inversion of the two minor chords after 16 elementary beats and continuous mirroring of the melodic movements between root and third on one hand and fifth and octave on the other ([sound 2](#); [mp3 - 2.9 MB](#)).

TABLE 3. Polyrhythmic harp music with horizontal and vertical mirroring

E'	X							X								X							
D'					X						X							X					
H		X	X					X	X							X							
A						X								X						X	X		
G			X						X							X							
F						X							X								X		
E	X							X								X							
D					X						X							X					

